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Service Manual

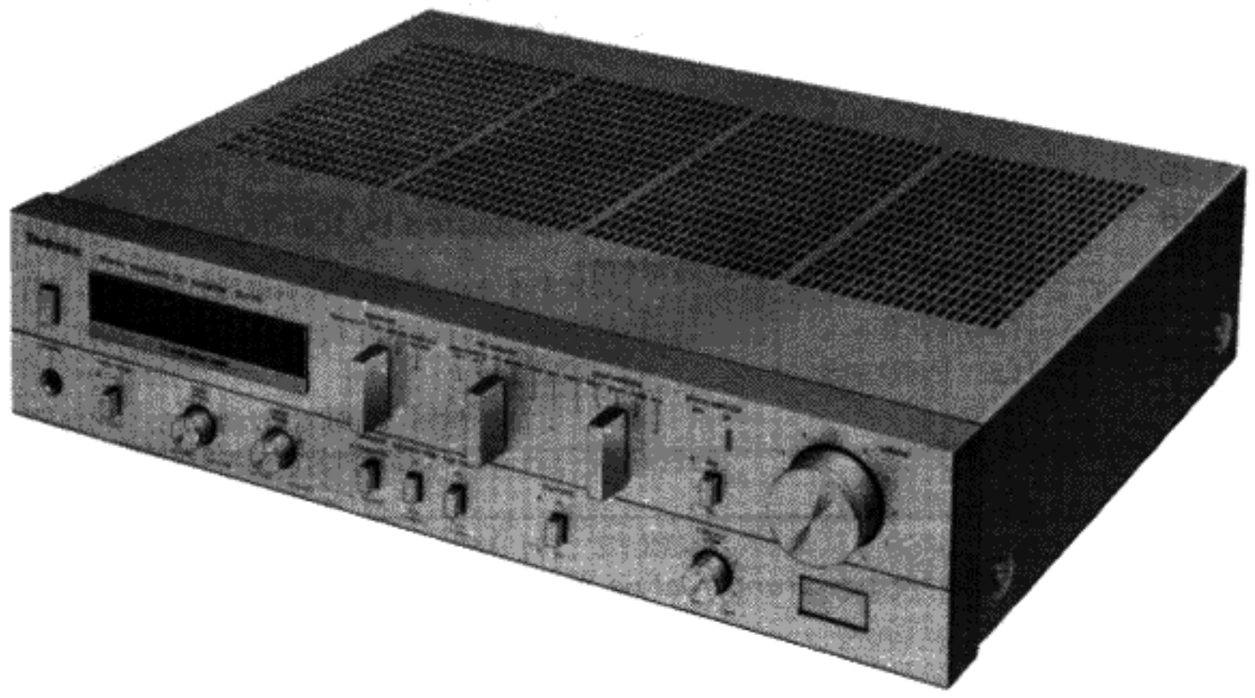
Stereo Integrated DC Amplifier

SU-V5

〔E〕,〔EG〕,〔EK〕,〔EF〕,〔EH〕,
〔EB〕,〔Ei〕,〔XA〕,〔XL〕

SU-V5 (K)

〔E〕,〔EG〕,〔EK〕,〔EH〕,
〔Ei〕,〔XA〕



* The cabinet and front panel are available in black color and silver types.
* The black type model is provided with (K) in the Service Manual.

Areas

* [E] is available in Scandinavia and Switzerland.
* [EG] is available in F.R. Germany.
* [EK] is available in United Kingdom.
* [EF] is available in France.
* [EH] is available in Holland.
* [EB] is available in Belgium.
* [Ei] is available in Italy.
* [XA] is available in Southeast Asia, Oceania, Africa, Middle Near East and Central South America.
* [XL] is available in Australia.

English

Specifications (Specifications are subject to change without notice for further improvement.)

(DIN 45 500)

■ AMPLIFIER SECTION

20 Hz~20 kHz continuous power output	
both channels driven	2 × 60W (4Ω)
	2 × 60W (8Ω)
40 Hz~16 kHz continuous power output	
both channels driven	2 × 60W (4Ω)
	2 × 60W (8Ω)
1 kHz continuous power output	
both channels driven	2 × 65W (4Ω)
	2 × 65W (8Ω)
Total harmonic distortion	
rated power at 20 Hz~20 kHz	0.03% (4Ω)
	0.005% (8Ω)
rated power at 40 Hz~16 kHz	0.03% (4Ω)
	0.005% (8Ω)
rated power at 1 kHz	0.007% (4Ω)
	0.003% (8Ω)
half power at 20 Hz~20 kHz	0.007% (8Ω)
half power at 1 kHz	0.003% (8Ω)
−26 dB power at 1 kHz	0.05% (4Ω)
50 mW power at 1 kHz	0.08% (4Ω)
Intermodulation distortion	
rated power at 250 Hz: 8 kHz=4:1, 4Ω	0.03%
rated power at 60 Hz: 7 kHz=4:1, SMPTE, 8Ω	0.007%
Power bandwidth	
both channels driven, −3 dB	
	5 Hz~40 kHz (4Ω THD 0.03%)
	5 Hz~35 kHz (8Ω THD 0.02%)
Residual hum and noise	0.5 mV
Damping factor	20 (4Ω), 40 (8Ω)

Input sensitivity and impedance	
PHONO MM	2.5 mV/47kΩ
MC	170 μV/220Ω
TUNER, AUX	150 mV/22kΩ
TAPE 1 REC/PLAY	180 mV/27kΩ
TAPE 2	150 mV/22kΩ
PHONO maximum input voltage (1 kHz, RMS)	
MM	150 mV
MC	10 mV
S/N	
rated power (4Ω)	
PHONO MM	79 dB (IHF, A: 86dB)
MC	67 dB (IHF, A: 68dB)
TUNER, AUX	89 dB (IHF, A: 100 dB)
−26 dB power (4Ω)	
PHONO MM	70 dB
MC	63 dB
TUNER, AUX	70 dB
50 mW power (4Ω)	
PHONO MM	67 dB
MC	63 dB
TUNER, AUX	68 dB
Frequency response	
PHONO	RIAA standard curve
	±0.5 dB (30 Hz~15 kHz)
TUNER, AUX, TAPE	2 Hz~120 kHz (−3 dB)
	+0 dB (20 Hz~20 kHz)
	−0.2 dB (20 Hz~20 kHz)

Continued on page 2

Technics

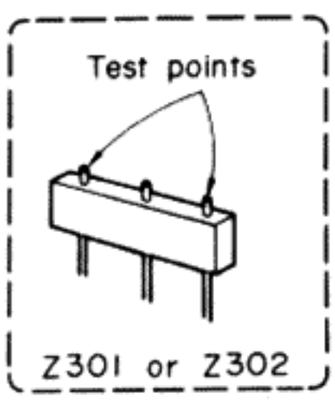
Matsushita Electric Trading Co., Ltd.
P.O. Box 288, Central Osaka Japan

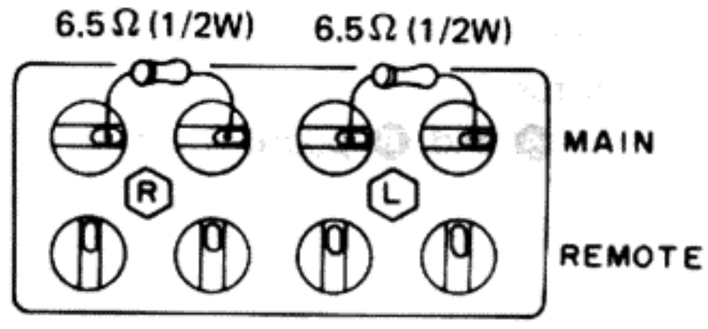
■ BEFORE REPAIR AND ADJUSTMENT

Turn off the power supply and short-circuit both ends of power supply condensers (C601, C602, 8200μF) at resistance (about 10Ω, 5W) in order to discharge the charged voltage. Avoid short-circuit with a screwdriver or the like, otherwise the transistors or diodes may break down.
Before turning on the power supply after completion of repair, slowly apply the primary voltage by using a voltage regulator to make sure that the current consumed is free of abnormality. The current consumed at 60Hz/50Hz in no-signal mode is shown below with respect to supply voltage 110V/120V/220V/240V.

Power supply voltage		AC 110V	AC 120V	AC 220V	AC 240V
Current consumed	50Hz	260 ~ 520mA	250 ~ 500mA	140 ~ 270mA	130 ~ 250mA
	60Hz	250 ~ 500mA	240 ~ 480mA	130 ~ 250mA	120 ~ 240mA

■ ADJUSTMENT POINTS





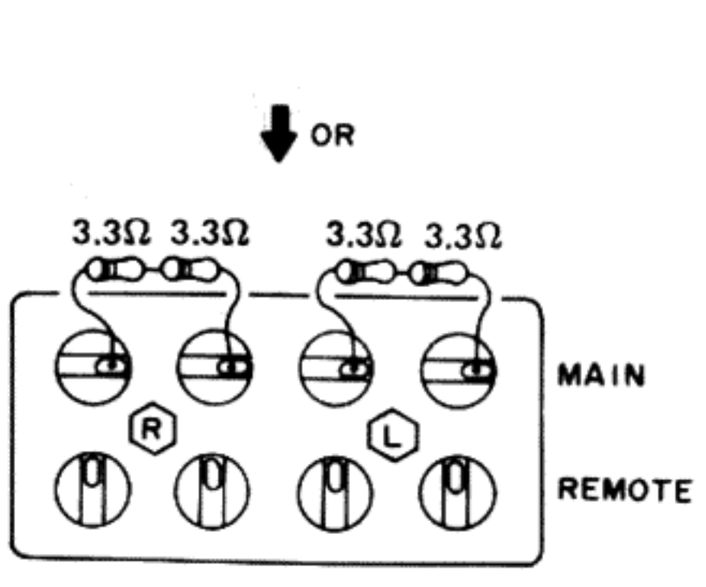
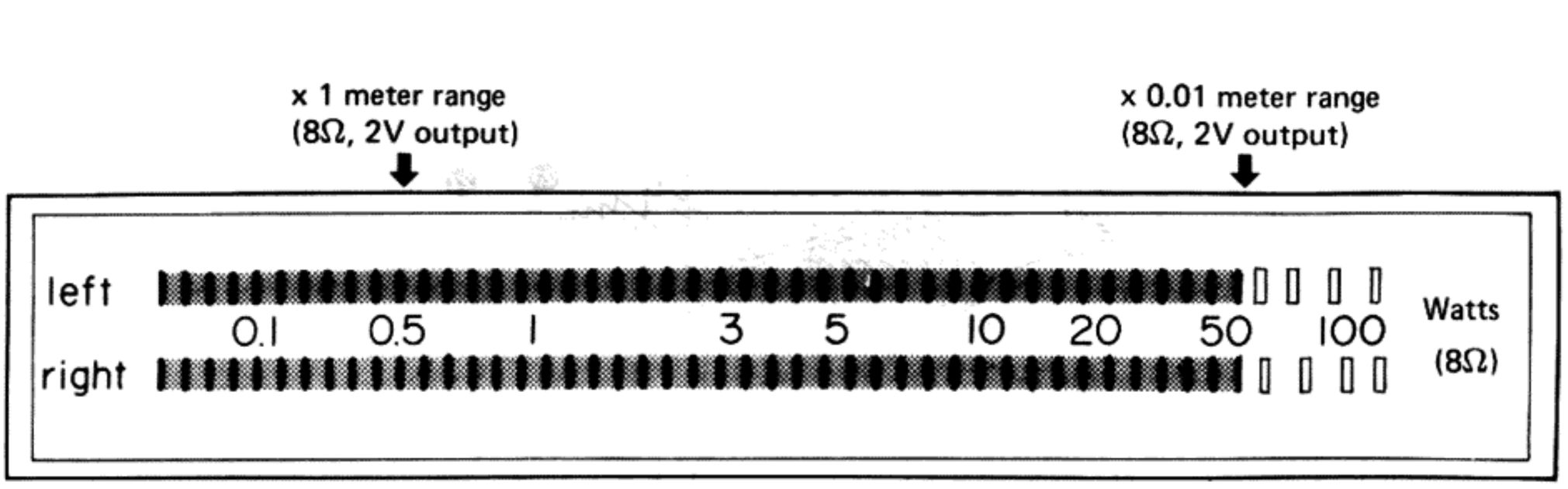


Fig. 18
(Abb. 18)



FL peak power meter:

Fig. 19 (Abb. 19)

■ MEASUREMENTS AND ADJUSTMENTS——————English——————

1. Load impedance detection and idling current of power transistor (I_{CQ})

● Setting and instruments used

1. Operation switch . . . . . straight DC
2. Speaker selector . . . . . main
3. Sound volume . . . . . 0 (minimum)
4. DC voltmeter (able to measure 4mV)
5. Instruments for circuit operation check
   (AC voltmeter, 1kHz oscillator, 8Ω load, 5W 0.33Ω resistor, 1/2W 6.5Ω or 3.3Ω & 3.3Ω)

Item	Connection of DC voltmeter	VR adjusted	Adjustment
Adjustment of load impedance detection circuit	*Connect a load with 6.5Ω (1/2W carbon resistor) or series-connected 3.3Ω and 3.3Ω (1/2W, ±5%) to the "main" speaker terminal. (Fig. 18) *Connect a DC voltmeter between TP401 and chassis.	VR402	*Connect TP402 and TP404 *Completely turn VR401 and VR402 anticlockwise beforehand. *Adjust VR402 so that the voltage of TP401 is −0.1V. *Adjust VR401 so that the voltage of TP402 is 0V.
	*Connect a load with 6.5Ω (1/2W carbon resistor) or series-connected 3.3Ω and 3.3Ω (1/2W, ±5%) to the "main" speaker terminal. (Fig. 18) *Connect a DC voltmeter between TP403 and chassis.	VR401	
Adjustment of I_{CQ}	L channel Connect voltmenter to TP1 (+) and TP2 (−)	VR303	① Completely turn VR303 and VR304 anticlockwise beforehand ② Adjust VR303 (L channel) and VR304 (R channel) so that the voltage is 20mV, about 10 min. after power supply ON.
	R channel Connect voltmeter to TP3 (−) and TP4 (+)	VR304	

2. Fluorescent peak power meter

Setting

- Connect a low frequency oscillator to the tuner input terminal, and 8-ohm load resistor and AC electronic voltmeter to the speaker terminal.
- Add 1kHz signal from the low frequency oscillator to the set.
- Set the sound volume to the maximum point.

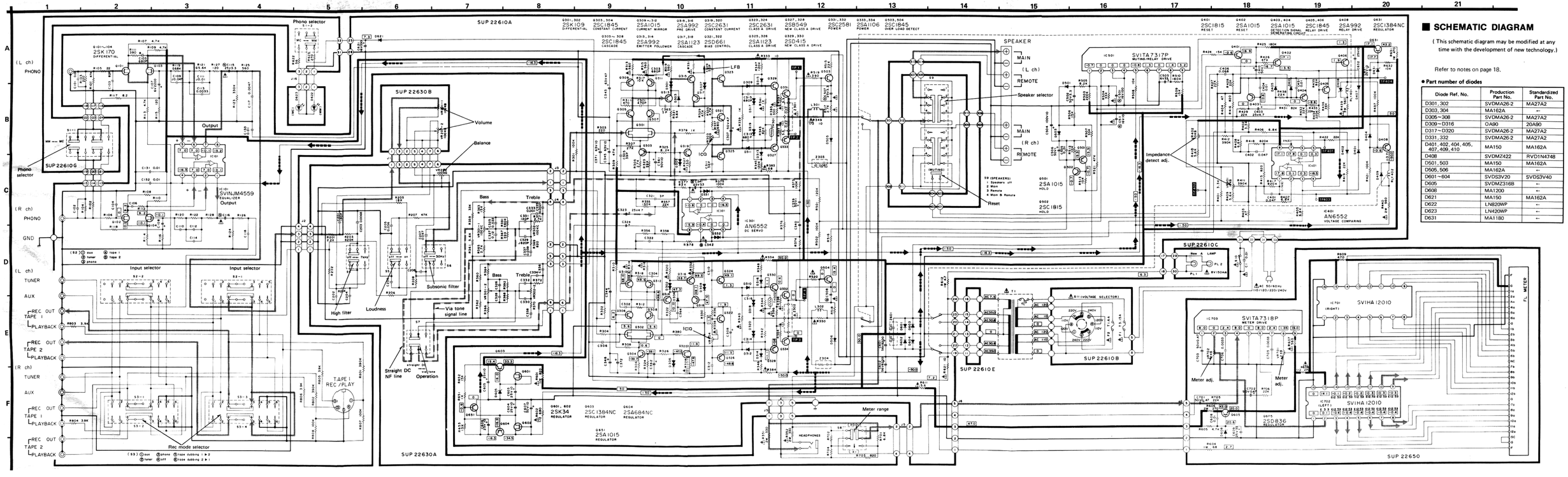
Item	Meter range select switch position	VR adjusted	Adjustment
Peak-power indicators	Range switch ... X0.01	VR702 (L ch) VR701 (R ch)	1. Adjust the input level so that the AC voltmeter indicates 2 volts. 2. Adjust the semi-fixed variable resistors VR702 (L ch.) and VR701 (R ch.) so that the 50W' segment of FL meter lights up dimly. (Fig. 19)

3. Check points

- **DC balance**
  ① Make the sound volume minimum.
  ② Connect DC voltmeter and 8Ω load to speaker terminal.
  ③ Make sure that output voltage is within ±30mV.

- **Overload detection circuit**
  ① Connect 8Ω load to "main" speaker terminal and 5W 0.33Ω resistance to "remote" speaker terminal.
  ② Apply 1kHz 40mV signal to "TUNER" terminal.
  ③ Make the sound volume maximum.
  ④ With speaker selector set at main and remote, make sure that relay in the set is OFF and no output is delivered.

  * **If protection relay turns OFF due to overload, the circuit and load will not restore their normal conditions unless power supply is once turned OFF and again turned ON.**



■ SCHEMATIC DIAGRAM

(This schematic diagram may be modified at any time with the development of new technology.)

Refer to notes on page 18.

● Part number of diodes

Diode Ref. No.	Production Part No.	Standerdized Part No.
D301, 302	SVDMA26-2	MA27A2
D303, 304	MA162A	←
D305~308	SVDMA26-2	MA27A2
D309~D316	OA90	20A90
D317~D320	SVDMA26-2	MA27A2
D331, 332	SVDMA26-2	MA27A2
D401, 402, 404, 405, 407, 409, 410	MA150	MA162A
D408	SVDMZ422	RVD1N4748
D501, 503	MA150	MA162A
D505, 506	MA162A	←
D601~604	SVDS3V20	SVDS3V40
D605	SVDMZ316B	←
D606	MA1200	←
D621	MA150	MA162A
D622	LN820WP	←
D623	LN420WP	←
D631	MA1180	←